

# LLM(Large Language Model)

A large language model (LLM) is a type of [artificial intelligence \(AI\)](#) program that can recognize and generate text, among other tasks. LLMs are trained on [huge sets of data](#) — hence the name "large." LLMs are built on [machine learning](#): specifically, a type of [neural network](#) called a transformer model.

In simpler terms, an LLM is a computer program that has been fed enough examples to be able to recognize and interpret human language or other types of complex data. Many LLMs are trained on data that has been gathered from the Internet — thousands or millions of gigabytes' worth of text. But the quality of the samples impacts how well LLMs will learn natural language, so an LLM's programmers may use a more curated data set.

LLMs use a type of machine learning called [deep learning](#) in order to understand how characters, words, and sentences function together. Deep learning involves the probabilistic analysis of unstructured data, which eventually enables the deep learning model to recognize distinctions between pieces of content without human intervention.

LLMs are then further trained via tuning: they are fine-tuned or prompt-tuned to the particular task that the programmer wants them to do, such as interpreting questions and generating responses, or translating text from one language to another.

## What are LLMs used for?

LLMs can be trained to do a number of tasks. One of the most well-known uses is their application as [generative AI](#): when given a prompt or asked a question, they can produce text in reply. The publicly available LLM ChatGPT, for instance, can generate essays, poems, and other textual forms in response to user inputs.

Any large, complex data set can be used to train LLMs, including programming languages. Some LLMs can help programmers write code. They can write functions upon request — or, given some code as a starting point, they can finish writing a program. LLMs may also be used in:

- Sentiment analysis
- DNA research
- Customer service
- [Chatbots](#)
- Online search

Examples of real-world LLMs include ChatGPT (from OpenAI), Bard (Google), Llama (Meta), and Bing Chat (Microsoft). GitHub's Copilot is another example, but for coding instead of natural human language.